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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

AHMED, AFFAF

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3622

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/674,312	JAIN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	AFAF AHMED	3622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 28 February 2008.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 29-33,36-45,48-51 and 53-56 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 29-33,36-45,48-51 and 53-56 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)          | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)          | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____  | 6) <input type="checkbox"/> Other: _____                          |

## **DETAILED ACTION**

### ***Status of Claims***

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17 (e), was filed in this application after final rejection. since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17 (e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 02/28/2008 has been entered.
2. Claims 29-33, 36-45, 47-51, 53-56 have been amended.
3. Claims 34, 35, 46 and 52 have been canceled.
4. Claims 29-33, 36-45, 47-51, 53-56 are currently pending and have been examined.

### ***Claim Objections***

5. Claims 36 and 37 are objected to because of the following informalities: Claims 36 and 37 referring back to a cancelled dependent claim 35. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 101***

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

7. Claims 29-33 and 36-42 and 56 are rejected under 35 U.S.C. 101, as best understood, it appears that the claimed method steps could simply be performed by mental process alone and are not statutory. The following passage comes from In Re Comiskey 84 USPQ2d 1670:

It is thus clear that the present statute does not allow patents to be issued on particular business systems—such as a particular type of arbitration—that depend entirely on the use of mental processes. In other words, the patent statute does not allow patents on particular systems that depend for their operation on human intelligence alone, a field of endeavor that both the framers and Congress intended to be beyond the reach of patentable subject matter. Thus, it is established that the application of human intelligence to the solution of practical problems is not in and of itself patentable.

The independent claims are directed towards a method. Since the claims are directed to a process without including another statutory class of invention (manufacture, machine, composition of matter), these claims fall within the scope of human intelligence alone, and are non-statutory.

8. Claims 43-50 are rejected under 35 U.S.C. 101 because the limitations recite a system per se which may be equated to that of interconnected devices which is defined by its physical structural elements and corresponding functionality. No physical structural elements are recited, the claims are directed to non statutory subject matter. The body of the claims comprise software modules, witch are virtual modules not physical structures.

### ***Claim Rejections - 35 USC § 112***

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claims 29,43,49,55 and 56 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 29,43,49,55 and 56 recite the limitation of: initializing a value of all possible states for said deterministic policy. The specification does not teach "initializing a value of all possible states for said deterministic policy." The specification (e.g., page 30, lines 13-17) teaches initial estimates of the Expected rewards for each state are assigned arbitrary.

11. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

12. Claims 29,43,49, 51, 55 and 56 recite the limitations of:

- *"determining an optimal marketing strategy based on a state of a customer and constraints corresponding to marketing channels, such that said state of a customer comprises a purchase frequency and a monetary value of purchases, wherein said determining of said optimal marketing strategy comprises determining an optimal policy for each state based on past data, wherein said determining of said optimal*

*policy comprises: "initializing a value of all possible states for said deterministic policy." It is unclear what applicant is referring to by "initializing a value of all possible states for said deterministic policy", since only one state is implemented. Appropriate correction and/or clarification is required.*

- "selecting a policy with maximum value for the state as the optimal policy for the given state" It is unclear which state applicant is referring to by "selecting a policy with maximum value for the state as the optimal policy for the given state". Appropriate correction and /or clarification is required.*
- Claim 51 recites the limitation of: "modeling customer's preferences for marketing channels, cost and effectiveness of different marketing channels, and the specified budget as effective constraints." It is unclear what applicant is referring to by modeling customer's preferences for marketing channels, cost and effectiveness of different marketing channels, and the specified budget as effective constraints." Appropriate corrections and/ or clarification is required.*

13. With regard to claims 43-50, the limitations recite a system per se which may be equated to that of an apparatus, which is defined by structural elements and corresponding functionality. The body of the claim does not contain any limitations indicating the structure of the device. A system or an apparatus claim should always claim the structure or the hardware that performs the function. No structural elements are recited so the scope of the system is unclear and undefined.

14. Claims 29, 43, 49, 51 and 56 recite the limitations: There is insufficient antecedent basis for this limitation in the claims.

- "selecting a policy with maximum value for the state as the optimal policy for the given state."*
- "modeling customer's preferences for marketing channels, cost and effectiveness of different marketing channels, and the specified budget as effective constraints."*

15. **Examiner's Note:** The Examiner has pointed out particular references contained in the prior art of record within the body of this action for the convenience of the Applicant. Although the specified citations are representative of the teachings in the art and are applied to the specific limitations within the individual claim, other passages and figures may apply. Applicant, in preparing the response, should consider fully the entire reference as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

***Claim Rejections - 35 USC § 102***

16. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

17. Claims 29-33, 37-40, 43-45 and 53-56 are rejected under 35 U.S.C. 102(e) as being anticipated by Abe et al, US Pub 2004/0015386.

As per **claims 29, 43, 49,55 and 56**, Abe teaches:

- *generating a plurality of marketing strategies;*
- *determining an optimal marketing strategy based on a state of a customer and constraints corresponding to marketing channels, such that said state of a customer comprises a purchase frequency and a monetary value of purchases, wherein said determining of said optimal marketing strategy comprises determining an optimal policy for each state based on past data, wherein said determining of said optimal policy comprises:*

See at least paragraphs 11-14 and 19.

- *identifying a deterministic policy;*
- *initializing a value of all possible states for said deterministic policy;*
- *computing the value of a state for said deterministic policy based on total expected reward of said state; and repeating said step of computing for all possible states;*
- *constructing a new improved policy; iteratively performing said steps of computing, repeating, and constructing until a new improved policy remains unchanged for two subsequent iterations;*
- *selecting a policy with maximum value for the state as the optimal policy for the given state;*
- *recording customer response to the deployed optimal marketing strategy; and updating information corresponding to the state of a customer based on the recorded customer response;*

See at least paragraphs 15, 18, 19, 24-29 and 88-93.

- *a database storing information regarding initiatives that are offered to customer; enabling a merchant to specify at least one objective for a specified time period*

*customer; generating a plurality of marketing strategies based on the objective specified by the merchant, the marketing strategies being a combination of initiatives.*

See at least paragraphs 26, 121, 176 and 199.

As per **claims 30, 44 and 50**, Abe teaches:

- *selecting at least one initiative that enables an addressing of the specified objective.*
- *determining sequences in which selected initiatives can be deployed, if more than one initiative is selected.*
- *combining the selected initiatives in the determined sequences to obtain the plurality of marketing strategies.*

See at least paragraphs 70, 176 and 199.

As per **claims 31 and 32**, Abe teaches:

- *Varying parameters of initiatives to generate new initiatives (see at least paragraphs 198 and 199);*
- *Varying deployment time of initiatives (see at least paragraphs 201 and 202).*

As per **claims 33, 38, 45 and 51**, Abe teaches:

- *determining an optimal policy for each state based on past data;*
- *identifying the state of a customer, the customer visiting a merchant or the customer being selected from a database of customer ;*
- *identifying the optimal policy for an identified customer state;*

See at least paragraphs 11-14, 152-157 and 167.

- *modeling customer's preferences for marketing channels, cost and effectiveness of different marketing channels, and the specified budget as effective constraints;*
- *determining an optimal feasible policy based on the identified optimal policy and effective constraints corresponding to marketing channels; and determining the optimal marketing strategy from the optimal feasible policy .*

See at least paragraphs 185.192-196 and fig 19 with the associated text.

As per **claim 36**, Abe teaches:

- *computing transition probabilities from a given state to another state for the policy; and computing a sum of expected immediate reward and the discounted expected value (see at least paragraphs 73-87, and 79).*

As per **claims 37, 47 and 53**, Abe teaches:

- *selecting the marketing strategy which maximizes a value for the state over all marketing strategies for a given state; and repeating said step of selecting for each state (see at least paragraphs 24, 106, 111 and 154).*

As per **claims 40, 48 and 54**, Abe teaches:

- *identifying a resulting state of the customer and updating values of the state of the customer; and updating an optimal policy (see at least paragraphs 88-95, 97).*

As per **claims 41 and 42**, Abe teaches:

- *computing a sum of a new immediate reward, a discounted value corresponding to the resulting state, reduced by a value corresponding to an initial state of the customer;*
- *updating the values corresponding to the initial state of the customer by adding a Fraction of the computed sum to a value of a previous state of the customer; and*
- *propagating a change in the value of the state to all other states.*

See at least paragraphs 73-86.

### **Conclusion**

18. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.
- Ulwick, US Pat No: 6,115,691, teaches computer based process strategy evaluation and optimization based on customer desired outcomes and predictive metrics.
  - Honarvar et al, US Pat No: 6,609,120 B1 teaches decision management system which automatically searches for strategy components in a strategy.
  - Honarvar et al, US Pat No:6,708,155 B1 teaches decision management system with automated strategy optimization.
19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Affaf Ahmed whose telephone number is 571-270-1835. The examiner can normally be reached on Monday - Friday, 8:30 am-6:00 pm est, alt Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eric Stamber can be reached at 571-272-6724. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Retrieval (PAIR) system. Status information for published applications may be obtained from either



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AA

/Yehdega Retta/

Primary Examiner, Art Unit 3622